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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/722,506	11/28/2000	Koji Shigematsu	105192.01	6870

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EXAMINER

NGUYEN, HUNG

ART UNIT	PAPER NUMBER
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2851

DATE MAILED: 04/24/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/722,506

Applicant(s)

SHIGEMATSU, KOJI

Examiner

Henry Hung V Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 November 2000.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16, 18, 31-32, 38-103 is/are pending in the application.
- 4a) Of the above claim(s) 16, 18, 31, 32, 38-53 and 67-103 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 54-66 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 16, 18, 31, 32 and 38-103 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/234,969.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of group III (claims 54-66) in Paper No. 6 is acknowledged. The traversal is on the ground(s) that "the search and examination of the entire application could be made without serious burden". This is not found persuasive because the current application contains multiple inventions and each of the inventions has separate utility as indicated in the previous office action. Therefore, the distinct and separate searches are quite extensive and places serious burden on the examiner in regard to both search and examination.

The requirement is still deemed proper and is therefore made FINAL.

2. This application contains claims 16-18, 38-53, and 67-103 drawn to an invention nonelected with traverse in Paper No. 6. A complete reply to the final rejection must include cancelation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined

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was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C.

122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

(e) the invention was described in-

- (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
- (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

4. Claims 54-55 and 57-62 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Yamaguchi et al (U.S.Pat. 6,008,884).

With regard to claims 54-55, and 57-62, Yamaguchi teaches an projection lens system (160) comprising all basic structures of the instant claims such as a plurality of lenses including an aspherical lens surface and arranged along an optical axis of the projection optical system (see fig.16); aperture stop (AS) arranged among those lenses wherein the numerical aperture through the exposure field of the projection optical system is 0.80 (see col.22, lines 13-17).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 56 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi et al (U.S.Pat. 6,008,884) in view of Mercado (U.S.Pat. 5,990,926).

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With regard to claim 56, Yamaguchi discloses an exposure apparatus comprising substantially all of the limitation of the instant claim as discussed except for the exposure field having a dimension of "at least 25 mm". Mercado teaches a projection lens system has a numerical of *at least* 0.6 and an exposure field of at least 26.45mm in diameter. It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teachings of Yamaguchi and Mercado to obtain the invention as specified in claim 56 of the instant invention. It would have been obvious to a skilled artisan to modify the teaching of Yamaguchi to have an wide exposure area with a dimension of "at least 25mm" as taught by Mercado for the purpose of providing a high performance projection optical system having a wide exposure area and thus improving the throughput of the exposure apparatus. Further, it has been held that discovering an optimum value of a result effective variable involves only routing skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

7. Claims 63-66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi et al (U.S.Pat. 6,008,884) in view of Nakajima (U.S.Pat. 5,493,446).

With regard to claims 63-66, Yamaguchi discloses a projection optical system comprising substantially all basic features of the intent claims such as a plurality of lenses including an aspherical lens surface as discussed above. Yamaguchi does not expressly disclose the aspherical lens surface with the refractive power at a paraxial region being weaker/ or being stronger than the refractive power at a peripheral region. However, selecting an aspherical lens which has a weak/ or strong refractive power in the paraxial area for the purpose of suppressing the aberrations of the entire lens system is well known per se. For instance, Nakajima teaches a projection lens system having an aspherical lens with refractive power at the paraxial area being

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weaker than the refractive power at the peripheral area for compensation of the imaging performance due to the temperature change (see col.6, lines 64 to col 7 line 26). This provides a concrete suggestion that it would have been obvious to one having ordinary skill in the art at the time the invention was made to select an aspherical lens surface with refractive power at the periphery being weaker or stronger than the refractive power at the paraxial area as suggested by Nakajima for the projection optical system of Yamaguchi for the purpose of correcting the aberrations of the projection optical system and improving the quality of the images to be printed.

Prior Art Made of Record

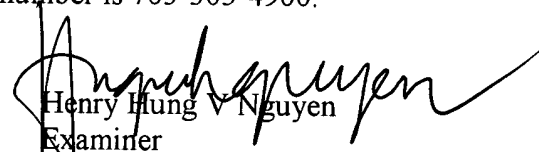
8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Nishi (U.S.Pat. 5,994,006) teaches a projection lens having numerical aperture of 0.8.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Henry Hung V Nguyen whose telephone number is 703-305-6462. The examiner can normally be reached on Monday-Friday (First Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Russ Adams can be reached on 703-308-2847.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4900.


Henry Hung V Nguyen
Examiner
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Hvn 4/18/02